

### Remarks

#### Claim Status

Claims 1-35 were originally presented for examination in this application. An election of species requirement was issued on April 9, 2007, in response to which Applicant elected Species IV, corresponding to Figures 11-13 and claim 34, and further indicated that claims 1-13, 19, 25-28 and 35 are readable on Species IV. As such, claims 14-18, 20-24 and 29-33 were withdrawn from consideration. An Office action issued on November 28, 2007, in which

- Claims 1-13, 19, 25-28, 34 and 35 were rejected under 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant's regard as the invention; and
- Claims 1-13, 19, 25-28, 34 and 35 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,687,681 to Schultz et al. ("Schultz").

In response, Applicant amended claims 1-3, 5-10, 12, 13, 19, 26-28, 34 and 35 to address these rejections and to further clarify and describe the invention with greater particularity. Applicant also added new claims 36-40. A final Office action issued on May 30, 2008, in which:

- Claims 1-13, 19, 25 and 36-37 were rejected under 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant's regard as the invention;
- Claims 1-13, 19, 25-28, 34 and 35 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,687,681 to Schulz et al. ("Schulz"); and
- Claims 36-40 were rejected under 35 U.S.C. §103(a) as being obvious in light of Schultz and U.S. Patent No. 7,016,873 to Peterson et al. ("Peterson").

In response, Applicant amended claims 1, 5-10, 19, 25, 26, 35, 36 and 38 to address these rejections and filed a Request for Continued Examination. A subsequent Office action issued on December 4, 2008, in which:

- Claims 1-13, 19, 25 and 36-38 were rejected under 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant's regard as the invention;
- Claims 26-28, 34, 35, 39 and 40 were rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter;
- Claims 1-4, 6-8, 11-13, 26, 27 and 35-40 were rejected under 35 U.S.C. §103(a) as being obvious in light of U.S. Patent Publication No. 20020143682 to Bergmann et al. (Bergmann) in view of U.S. Patent No. 7,016,873 to Peterson et al. ("Peterson"); and
- Claims 5, 9, 10, 19, 25, 28 and 34 were rejected under 35 U.S.C. §103(a) as being obvious in light of Bergmann and Peterson and in further view of U.S. Patent No. 6,687,681 to Schultz et al. ("Schultz").

In response, Applicant amended claims 1 and 8 to address these rejections and further clarify the invention, and cancelled claims 26-28, 34, 35, 39 and 40. A subsequent final office action issued on August 18, 2009, maintaining all of the rejections of the December 2008 office action. In this response, Applicant has amended claims 1, 7, 8, 9, 36, 37 and 38 and cancelled claim 34 to address these rejections and further clarify the invention. Support for these amendments can be found throughout the specification as originally filed and at least at pages 64-68. No new matter has been added.

#### Claim Rejections Under 35 U.S.C. §§112 and 101

Independent claim 1 as amended, recites an apparatus that includes an investor account database stored on a database server, and a computer-executable data pre-processor software module operating on a server for implementing various embodiments of the invention. Similarly, claim 8, as amended, recites a database server for storing

data related to investment accounts and a processor that executes various software modules for implementing the various functions of the invention. Applicant respectfully suggests the metes and bounds of these claims are clearly defined, and the claims are directed to statutory subject matter, and as such requests withdrawal of these rejections.

Claim Rejections Under 35 U.S.C. §103(a)

Independent claims 1 and 8, as amended, each recite optimizing a financial portfolio for after-tax returns and total tax costs based on proposed trades generated in response to investment styles (claim 1) or model portfolios (claim 8) and resulting in adjustments to existing position(s) in the financial portfolio. For at least the reasons detailed below, neither of the approaches described by Bergmann or Peterson perform such an optimization. More specifically, the claimed apparatus considers potential trades impacting numerous existing positions held in a financial portfolio in such a manner as to consider risk, return, short term capital gains, short term capital losses, long term capital gains and long term capital losses associated with execution of each of these possible adjustments.

Bergmann describes techniques for facilitating the allocation of assets among various asset classes, including “an asset class not included among the standard asset classes.”<sup>1</sup> Bergmann’s approach involves allowing users to “specify the linear coefficients and automatically calculate the necessary asset class data from a combination of data from the standard and previously specified asset classes.”<sup>2</sup> Using Bergmann’s approach, an investor’s assets are “associated with one of the standard asset classes” or, if no appropriate class exists, a “new class may be created.”<sup>3</sup> To predict the return of these newly created classes, Bergmann uses an objective function that includes multiple “other” known asset classes, each having an expected pre-tax return and standard deviations from the expected return, as well as co-variances and correlations among the asset classes.<sup>4</sup> Subsequently, “the user may establish any number of accounts” and “each

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<sup>1</sup> Bergmann, para. [0010].

<sup>2</sup> Bergmann, para. [0011].

<sup>3</sup> Bergmann, para. [0029].

<sup>4</sup> Bergmann, para. [0016].

account is assigned a specific type designation.”<sup>5</sup> Each account may then be “attributed with specified tax characteristics that apply to all the asset classes allowed in the account.”<sup>6</sup> In effect, the Bergmann methodology may be used to determine how to invest funds amongst various accounts, some of which may be taxable and some of which may be non-taxable, in light of the historical tax performance of the assets within the accounts. But Bergmann stops there, ignoring the ongoing management of the portfolio. Critically, Bergmann’s approach is limited to determining an initial asset allocation of funds among particular *asset classes* – not to the determination of whether to execute individual trades within an existing portfolio based on how the transactions affect overall tax liability, as claimed.

While it may be important to optimize asset allocation of funds when designing a model portfolio and pricing the portfolio net of taxes, it is the ongoing management of transactions within the portfolio that ultimately dictates an individual’s tax burden year after year. Bergmann clearly limits his teaching to the former, while the claimed invention addresses the latter. More specifically, Applicant’s invention analyzes multiple potential portfolio adjustments (e.g., buying and selling individual positions) to determine if one particular trade is more beneficial (from a tax perspective) than another – a fundamentally different problem than is addressed by Bergmann. Bergmann may attempt to assign an after-tax rate of return to asset classes, but they are then fixed for that class, and any subsequent analyses use these predetermined returns. Although the user may alter these parameters, such changes are done at the asset class level, not in response to potential trades.

By analyzing possible trades to existing positions within a portfolio (not initial allocations of funds to an asset class), the claimed invention considers the real-world condition that an investor’s after-tax rate of return is a function of not only the allocation of assets among asset classes, but also individual transactions involving specific securities held in a portfolio, a challenge ignored by the Bergmann technique. Therefore, the invention provides a significant improvement over conventional portfolio allocation systems such as Bergmann by considering the tax implications of proposed trades prior to

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<sup>5</sup> Bergmann, para. [0033] and [0034].

<sup>6</sup> Bergmann, para. [0034].

execution and in consideration of past transactions involving individual positions in a portfolio.

The Examiner further cited Peterson in combination with Bergmann in her rejection of independent claims 1 and 8. While Peterson does utilize an objective function and various constraints to model a financial portfolio, his application of such a model is limited to providing “a recommendation of an investment portfolio that best satisfies the goals of the customer.”<sup>7</sup> Unlike Applicant’s invention that is designed to optimize a portfolio’s overall return over time as specific trades are contemplated and executed, Peterson, like Bergmann, is merely concerned with determining an optimal initial allocation across various investment vehicles in an attempt to estimate the future tax efficiency of an overall portfolio allocation. While the determination of how to invest a customer’s funds does take into account the tax effects of the portfolio in view of her tax status, this consideration is limited to whether the positions in the portfolio are held in taxable or non-taxable accounts.<sup>8</sup> In fact, when describing the tax effects of selling securities, Peterson only contemplates the transactions’ impact on overall portfolio risk, not specific tax implications associated with each transaction. Specifically, Peterson states:

“Given the estimation error inherent in variance-covariance estimates, the added level of precision associated with adjusting these estimates for taxes seems like overkill. The existence of taxes would reduce variance calculations relative to their pre-tax levels. Moreover, the less tax efficient the asset the more the variance is reduced. Therefore, by not adjusting variances for tax effects a slight tendency towards the optimizer favoring less tax efficient assets is avoided.”<sup>9</sup>

Peterson then states further that “when users rebalance they may incur transactions costs and taxes. Since these costs are difficult to estimate and tend to be small they are not included in future forecasts or in the optimization.”<sup>10</sup> Again, using an example to highlight the key difference between Peterson and the claimed technique, consider an investment product (e.g., a mutual fund) that has a certain level of tax efficiency. Peterson addresses the decision of whether or not to purchase that fund as

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<sup>7</sup> Peterson, col. 3, lines 41-43.

<sup>8</sup> Peterson, col. 3, lines 43-45 and col. 4, lines 2-3.

<sup>9</sup> Peterson, col. 14, lines 37-45.

<sup>10</sup> Peterson, col. 19, lines 40-44.

part of an initial allocation of assets, and if so whether to put it in a qualified (i.e., tax-deferred) account. Conversely, Applicant's approach considers the tax implications of day-to-day transactions, thus requiring the incorporation of tax constraints into the objective function. Clearly, Peterson actually teaches away from considering the tax implications of individual transactions within a portfolio.

Lastly, the Examiner cites to Schutz for the limited purpose of illustrating that a tracking error may be calculated and minimized with respect to a model portfolio. Whether or not the case, Schulz does not teach or suggest analyzing proposed transactions to determine their affect on a portfolio's overall after-tax return as claimed, and as such does not cure the deficiencies of Bergmann and Peterson.

Thus, because none of Bergmann, Peterson or Schutz, either alone or in combination, teaches or suggests every element of independent claims 1 or 8 as amended, Applicant respectfully submits that these references fail to render these claims as obvious. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1 and 8 under 35 U.S.C. § 103(a), as well as those claims that depend directly or indirectly therefrom.

**Conclusion**

Applicant respectfully submits that, in light of the foregoing amendments and remarks, claims 1-13, 19, 25-28 and 35-40 are in condition for allowance, and requests that application proceed to issue. If, in the Examiner's opinion, a telephonic interview would expedite the favorable prosecution of the present application, the undersigned attorney would welcome the opportunity to discuss any outstanding issues and to work with the Examiner toward placing the application in condition for allowance.

Respectfully submitted,

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